

IN THE CLAIMS:

Claims 1 – 14 (cancelled)

Claim 15 (cancelled)

16. (currently amended) A system for powering an electric motor, comprising:

an electronic drive unit having a power input and a power output for connection to an electric motor, said drive unit including circuits having semiconductor components with performance characteristics that are enhanced at temperatures below ambient, said power output of said drive unit being compatible with performance requirements of said electric motor;

an electrical power generator system electrically connected to and supplying power to said electronic drive circuit power input, said electrical power generator system including an oxygen/hydrogen fuel cell;

a refrigeration unit thermally connected to said drive unit to cool said circuits with semiconductor components below ambient temperature and to enhance performance;

A system as in Claim 15, further comprising:

an electric motor having controllable output and performance requirements, cooling said motor enhancing its operating performance, said drive unit power output having an electrical connection to said electric motor to power said motor,

said refrigeration unit being thermally connected to said electric motor to cool said motor and enhance motor performance.

17. (cancelled)

18. (cancelled)

19. (cancelled).

20. (currently amended) A system as in ~~Claim 19~~ Claim 16, wherein said refrigeration unit includes a tank containing one of hydrogen and liquid natural gas to provide hydrogen fuel to said fuel cell and to serve as a system coolant.

21. (previously presented) A system as in Claim 20, wherein said tank is contained within an enclosure containing liquid nitrogen.

22. (cancelled)

23. (cancelled)

24. (previously presented) A system as in Claim 20, wherein said motor includes at least one of coils and windings of superconducting material, said motor being cryo-cooled via thermal connection between said tank and said motor, said tank content being at cryogenic temperature to maintain said coils and windings in a superconducting state.

25. (cancelled)

26. (cancelled)

27. (previously presented) A system as in Claim 20, wherein said tank contains liquid natural gas, said liquid natural gas being delivered to said fuel cell by way of tubes and a reformer generating hydrogen from said liquid natural gas.

28.(presently amended) A system as in Claim 20, wherein said tank contains ~~liquid~~ hydrogen, said electronic drive unit being positioned in a temperature environment maintained by said ~~liquid~~ hydrogen between 20K and 200K.

29. (previously presented) A system as in Claim 20, wherein said electronic drive unit is sealed in a container, said container being immersed in said tank, said tank containing liquid natural gas.

30. (previously presented) A system as in Claim 20, wherein said tank is thermally connected to said electronic drive unit by cold fingers, said drive unit being cooled by heat conduction along said fingers.

31. (cancelled)

32. (cancelled)

33. (new)A system for powering an electric motor, comprising:

an electronic drive unit having a power input and a power output for connection to an electric motor, said drive unit including circuits having semiconductor components with performance characteristics that are enhanced at temperatures below ambient, said power output of said drive unit being compatible with performance requirements of said electric motor;

an electrical power generator system electrically connected to and supplying power to said input of said electronic drive circuit, said electrical power generator system including an oxygen/hydrogen fuel cell;

a refrigeration unit thermally connected to said drive unit to cool said circuits with semiconductor components below ambient temperature and to enhance performance, said refrigeration unit being thermally connectable to said electric motor to cool said motor.

34. (new) A system as in Claim 33, wherein said refrigeration unit includes a tank containing one of hydrogen and liquid natural gas to provide hydrogen fuel to said fuel cell and to serve as a system coolant.

35. (new) A system as in Claim 34, wherein said tank is contained within an enclosure containing liquid nitrogen.

36. (new) A system as in Claim 34, wherein said tank contains liquid natural gas, said liquid natural gas being delivered to said fuel cell by way of tubes and a reformer generating hydrogen from said liquid natural gas.

37. (new) A system as in Claim 34, wherein said tank contains hydrogen, said electronic drive unit being positioned in a temperature environment maintained by said hydrogen between 20K and 200K.

38. (new) A system as in Claim 34, wherein said electronic drive unit is sealed in a container, said container being immersed in said tank, said tank containing liquid natural gas.

39. (new) A system for powering an electric power consuming unit, comprising:

an electronic drive unit having a power input and a power output for connection to an electric power consuming unit, said drive unit including circuits having semiconductor components with performance characteristics that are enhanced at temperatures below ambient, said power output of said drive unit being compatible with performance requirements of said electric power consuming unit;

an electrical power generator system electrically connected to and supplying power to said electronic drive circuit power input, said electrical power generator system including a fuel cell;

a refrigeration unit thermally connected to said drive unit to cool said circuits with semiconductor components below ambient temperature and to enhance performance, said refrigeration unit being thermally connectable to said electric power consuming unit to cool said power consuming unit.

40. (new) A system as in Claim 39, wherein said refrigeration unit includes a tank containing one of hydrogen and liquid natural gas to provide hydrogen fuel to said fuel cell and to serve as a system coolant.

41. (new) A system as in Claim 39, wherein said tank contains liquid natural gas, said liquid natural gas being delivered to said fuel cell by way of tubes and a reformer generating hydrogen from said liquid natural gas.

42.(new) A system as in Claim 40 , wherein said tank contains hydrogen, said electronic drive unit being positioned in a temperature environment maintained by said hydrogen between 20K and 200K.